

Species Management Plan
oxeye daisy
Chrysanthemum leucanthemum L.

Life History / Identification: Oxeye daisy is a native of Eurasia. It is a member of the sunflower family, Asteraceae. It is described as a showy perennial with white ray flowers and yellow disk flowers. The leaves are thick and leathery. The lower leaves are oval to spatulate with long petioles. The upper leaves are lance shaped and clasping. All leaves are toothed (dentate). The plant is twelve to thirty six inches tall with upright stems bearing a single bloom at the end of each stem. It has creeping rhizomes, which can form new plants. This enables the plant to form dense colonies in places where it occurs. Reproduction can occur from seeds or vegetatively from rhizomes. The plant is a prolific seed producer. Seeds have a pappus and can be wind dispersed.

Status: Oxeye daisy is an invasive exotic. It is currently not recognized as a noxious weed on the Coconino, Kaibab and Prescott National Forests or on the Arizona Noxious Weed List.

Impacts: Oxeye daisy competes aggressively with native vegetation. It can displace native wild flowers and native perennial grasses. It can be especially bothersome in pastures. It is unpalatable to cattle causing the animals avoid eating the oxeye daisy plants. This can favor the oxeye daisy plants, allowing them to spread more quickly. Large colonies of oxeye daisy can eliminate native plants and reduce the plant species diversity in these areas. When oxeye daisy, with small taproots replaces perennial grasses with fibrous root systems, soil erosion can increase. Bare soil is more common in the oxeye daisy colonies. The amount of organic matter in the soil can decrease when oxeye daisy replaces native grasses. The taproots of oxeye daisy do not contribute the same amount of organic material to the soil as the fibrous root system of perennial grasses. Oxeye daisy is recognized as a noxious weed in some states, but is still sold as a wild flower in others. In preparing this write-up, several websites were accessed which offered oxeye daisy for sale. Most of these sites were for wild flower retail companies.

Northern Arizona Localities: No confirmed locations of oxeye daisy are known to exist in the Coconino, Kaibab and Prescott National Forests. A possible location was seen while conducting a noxious weed survey for Buck Springs Allotment on the Long Valley and Blue Ridge Ranger Districts in 1999. The location was along Forest Road 141 near Kinder Crossing. A follow up visit is needed to collect plants from the site and determine the identity. There could be possible locations of this plant around areas of present and former habitation where it may have been planted as an ornamental. Areas where wildflower seed mixes were used may also have some populations of this plant, where seeds may have been included in "naturalizing mixes".

Control:

1. Cultural Control:

Education and prevention could be the most useful method of control for this species in wild land areas. This species is still favored and promoted in the horticulture trade. While it may be a desirable species in urban gardens, it is undesirable and destructive in wild land settings. Local natives, Shasta daisy, black-eyed Susan or blanket flower should be encouraged as alternatives for this species in local gardens. Seed mixes should be checked for the presence

of oxeye daisy before they are used in naturalization projects. Local nurseries should be encouraged to promote less invasive alternatives to this plant.

Grazing by cattle can affect the density of oxeye daisy infestations. Continuous or intense cattle grazing will cause oxeye daisy to increase if it is present in the pasture. This increase is seen in the recruitment of seedlings and young plants into the population over time. In some cases, cattle will actually pull up the entire mature plant, and then drop it on the ground because it is unpalatable (Sheley, 1999). A less intense grazing system for cattle will not eradicate a population of oxeye daisy but will help to prevent its' increase. Horses, sheep and goats graze on oxeye daisy, but no information was available to determine if these animals would be effective for control of the species.

2. Mechanical Control:

Small populations can be removed by **digging** if it is done before seeds are produced. Care should be taken to remove all portions of the underground root to prevent vegetative regeneration. Digging should be done before the plants form seeds. The seeds of oxeye daisy remain viable for several years. For this reason, digging would probably be most effective on newly established populations.

Cultivation can effectively control oxeye daisy infestations in agricultural fields. Repeated tilling easily destroys the shallow roots. **Mowing** can help control the plants if it is done as soon as the first flowers open. This reduces the number of seeds produced but can also stimulate shoot production and allow a second flowering later in the growing season if it is long enough.

No information was found on the effects of **burning** on oxeye daisy.

3. Chemical Control: Noted here are chemical control techniques in use in other areas. Always check with weed specialists or chemical suppliers to ensure correct dosage and application. Mention of these products does not imply endorsement by the Northern Arizona Weed Council, San Francisco Peaks Weed Management Area, the USDA Forest Service, nor the Nature Conservancy. Currently the use of herbicides is not allowed on lands administered by the Coconino, Kaibab and Prescott National Forests. Always check with your local land manager before using herbicides on public lands.

Fertilizer has been experimentally applied on populations of oxeye daisy (Sheley, 1999). The fertilizer was applied at a high rate over several years. This seemed to be almost as effective as treatment with herbicides. The treatment apparently increased productivity in native grasses, therefore plant competition by the grasses increased.

Herbicides used on oxeye daisy include 2,4- D and picloram. The oxeye daisy can be moderately resistant to 2,4-D (Sheley, 1999). Atrazine has been used to control oxeye daisy in croplands. Repeated treatments with 2-4-D plus dicamba has been used to control oxeye daisy in pasture lands (Lorenzi).

4. Biological Control:

There are currently no approved biological control agents available for oxeye daisy.

5. Integrated Control:

An experiment was done using the herbicides 2,4-D and picloram with nitrogen fertilizer. In this experiment some areas were treated with herbicide, some with herbicide and fertilizer and some with only fertilizer. The herbicide treatments were effective but the fertilizer treatment alone was almost as effective. (Sheley, 1999). Herbicide treatment plus plowing or disking was used on oxeye daisy. This treatment resulted in an increase of oxeye daisy. The plowing or disking was done only once and could have resulted in the fragmentation of oxeye daisy roots.

References:

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